

Survival Garden Secrets

Survival Garden Secrets

by

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Chapters

1. Why Grow a Survival Garden
2. A New View of What Plants Can Do
3. Growth From the Air
4. PH and Importance of Calcium
5. The Compost Pile
6. Preparing the Soil
7. NPK
8. Micro Nutrients
9. Phenotype and Genotype
10. Weeds
11. Manure Tea
12. Foliar Feeding is Key
13. SGS (Survival Garden Secrets) Foliar Spray
14. Open Pollinated vs Hybrid and GMO
15. What to Grow and Why
16. Herbs
17. Saving Seeds
18. Berries and Grapes
19. Fruit and Nut Trees
20. Recipes for Canning and Freezing
21. Wrap Up
- 22 The Least Thought Survival Resource

Survival Garden Secrets

Introduction

If you wanted to be a great race car driver I could tell you how to tune a race car engine and how to engineer race car tires. I could give you the physics and aerodynamics. I could write volumes of books on these subjects. But you would be better served if I gave you things you can do to be a better race car driver. The other knowledge is good.. you just don't need to know these things to drive the car. You could be the best race car driver in the world and be clueless how a four stroke engine works.

This book is written for the person who wants to grow a lot of food in their own garden. It is written in a manner to give you tools you can use to accomplish this goal. It is not a book of agricultural chemistry. It is not a school textbook. My goal in writing this book is to equip you to grow more food than most anyone has ever dreamed possible. What this book does is unlock for you hidden secrets and tools that produce plant growth that has never been seen before on this planet.

This book is revolutionary and the effects can be world altering. The weapons you now hold can end world hunger. Increase intelligence globally, increase health globally, greatly reduce disease. Paraphrasing Jonathan Swift, the man that grows two bushels of food where previously only one bushel could be grown, does more for his fellow man than all the governments of the world combined. Except we will not just be doubling the food supply but also producing superior food at the same time.

Chapter 1

Why grow a survival garden

Apart from the obvious answer that eating beats going hungry, at this time in history we can go to the store and get all the food we want. Even if one can't afford to go to the store for food there are many programs to make sure no one goes hungry in this country.

For many Americans today there are more reasons to grow one's own food. There is the security of what happens if the supply of food to the stores is disrupted or cut off completely. There is the idea that one's home grown food is superior, maybe more nutritious. Home grown food can be safer being grown organically or with less chemical abuse. There is the money saving aspect of growing ones food. Currently food prices have gone up between 20 - 50 percent in just the previous year.

Much of the food sold in the super markets has been adulterated with chemicals like MSG and high fructose corn syrup. Canned in tins lined with BPAs (which cause men to lose their manhood.) Many products now are manufactured using genetically modified food stuff (GMOs) which can

Survival Garden Secrets

pose who knows what health risks. Just a few years ago many people lost their pets due to GMOs from China in pet food.

Currently there are roughly 50-60 million gardeners in the U.S. alone and we can expect that number to rise with this worsening economic depression. These gardeners are producing an average \$200-\$2000 dollars of healthy nutritious food for their families per year. If the average gardener produces \$1000 of food that's an added 50-60 billion dollars of economic activity that benefits real Americans and is not subject to taxes. My saying is a dollar saved is two dollars earned (after taxes eats away a dollar).

My hope is this book will help double or triple that amount of food without gardeners having to till a single extra square foot of soil. It is also my hope the information contained within can help most Americans grow more nutritious food, save thousands off their food bill and become healthier themselves because of the better nutrition of food they are eating. You may find you produce so much food you will be sharing it with friends, neighbors, family and maybe even selling some.

In the remote possibility that some cataclysmic event happens it is also my goal to help prepare you to be able to feed yourself and your family. Last but not least there is the issue of personal freedom. Growing one's own food gives a knowledge of self sufficiency and protects our families from those who would use food to control us. Growing your own food is the highest form of Jeffersonian ideals.

Chapter 2

A New View of What Plants Can Do

My father-in-law from Georgia is a master gardener. I had seen his garden for the first time the year before and the next year was my turn to show off. In his words he had never seen anything like what he saw. To show our tomato plants I had to find the end of one thirty some feet from its base and peel the plant back revealing over 100lbs of bright red ripe tomatoes each tomato touching the ones next to it looking like a carpet of tomatoes. The plant was massive weighing easily over 200lbs and all the other tomato plants were just as big.

The corn was producing an average six ears per plant with some plants getting as many as ten. The straight neck squash was producing five pound squash instead of the normal half pound. The fruit was tender and tasty. Our ten cucumber plants were being picked every day and their produce hauled out in a wheel barrow. Our pumpkins were not as big as I hoped with only a few over 100lbs but then again they weren't known for getting bigger than 50lbs.

Our biggest problem was getting rid of all the excess. We had resorted to leaving grocery bags of veggies on neighbor's

Survival Garden Secrets

front steps until they finally all stepped forward and demanded we stop over flowing them with produce. Everyone of them demanded we stop cold.

We have been conditioned by hybrid corn and other plants that plant growth is uniform. The truth is it's anything but.. and if given the right nutrients garden plants can produce many many times more food than we have been taught is possible.

On the other hand if plants are missing key nutrients they can under produce just as well and that is going to be the problem facing most people who have little or no experience trying to produce food for themselves and their families.

Most who think growing food for themselves is as easy as digging a little yard up and dropping in some seeds from a can are going to be disastrously disappointed. Preparing soil for growing your family's food needs can take years and a ton of knowledge. Which is the point of this book. I am not only going to give you the know-how to prepare your garden soil for long term food production but also am going to give you powerful tools that will enable you to produce abundant food from your garden NOW... Right away... **WHEN YOU NEED IT MOST!**

One of the least understood ideas of growing plants is that the plant is limited by what is missing. Your garden could have phenomenal levels of organic matter, high levels of NPK (Nitrogen, Phosphorous, and Potassium) but if it's missing a

micro nutrient like cobalt... sorry.. your plants will suffer and not produce the way you want and your food will be lacking in proper nutrients.

Imagine a water barrel and write on each of the vertical boards making up the barrel a plant nutrient. If just one of those boards is missing then the barrel does not hold water. The same is how it works for growing plants. If your soil is devoid of sulfur then how does your plant create proteins? If missing magnesium then how does your plant grow without photosynthesis?

It is by raising the level of all the needed nutrients that the soil becomes able to support superior plant growth. Very few people have seen this kind of growth in plants because it is fairly rare but it is what we will be aiming for in your garden.

One can have every possible nutrient needed except one and the plant will grow in a sickly manner. It will be open to attack from insects, fungus... add the one missing nutrient and you will have a very happy plant with explosive growth. An example. if one has little to no sulfur, and a lot of farm fields are sulfur deficient (yes acid rain is a good thing,) all the chemical processes that require sulfur will have to limp by on some substitute chemical, or not be able to sustain life at all. Sulfur is needed in the production of proteins. No sulfur, No protein. Simple as that.

This is the most important lesson in this book. Learn it well and etch it on your brain. It doesn't matter how abundant

Survival Garden Secrets

your levels of NPK are. It doesn't matter how much organic material is in your garden. It has nothing to do with the abundance of all the nutrients in your soil. The determining factor in plant growth is what is missing. That is why a little boron, a little manganese or a little this or that trace mineral is going to unlock tremendous growth.

Chapter 3

Growth from the Air

It may surprise you but most of the mass of the plants that grow in your garden or yard or woods came from the air. Very little of plant material comes from the ground. If you were to break down a small tree that weighs one thousand pounds you might be surprised to find that may be one pound of that came from the soil.. the rest of that tree came from the air. This can be proven very quickly by burning the trees wood in your wood stove and measuring the amount of ash that's left after burning.

The water (H₂O) comes from the air. The carbon dioxide (CO₂) comes from the air. Water and carbon dioxide form sugar ($6\text{H}_2\text{O} + 6\text{CO}_2 = \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$). Nitrogen also comes from the air.

This is why plants don't grow well in droughts and why green house growers add CO₂ to the air to increase plant growth. Many commercial greenhouses raise CO₂ levels to four times normal to increase plant growth as much as three fold. This is also why the respiratory system of the plant is so important. On the under side of plant leaves are stomata. These are small mouths that breathe and uptake the morning

Survival Garden Secrets

dew along with small amounts of nutrients captured in the moisture. CO₂ levels are generally higher in the early morning. This is when the plants respiratory system is at its most active to take advantage of these higher levels.

Increase the organic material in your soil. This increases its water holding capabilities and also increases the CO₂ levels close to the ground in the plant zone as the organic material breaks down. I have seen it many times where my neighbors fields are falling dead from lack of rain and my gardens are green and thriving because of the higher organic material holding a much larger reservoir of moisture.

Not all organic material is the same. One cannot just put fresh manure in their garden. The Carbon and Nitrogen levels are not balanced. Manure and organic material must first be composted to kill and destroy harmful materials. This follows the first rule for gardening. Microbes eat first. One must first feed the soil microbes. Then one can feed the plants. This poses a very great dilemma for first time garden growers. There is not time to feed the microbes first and wait for the soil to become in proper condition to support superior growth. This is a life or death problem in a survival situation and there is a little known secret to keep you alive called foliar feeding. Foliar feeding allows you to feed your garden plants directly and bypass many of the problems one can have while bringing their soil up to maximum productivity.

Chapter 4

PH and Importance of Calcium

PH is a measurement of active Hydrogen concentrations also known as acidity. A PH of 1 is highly acidic and a PH of 14 is highly alkaline. A PH of 7 is considered neutral. Two major chemicals determine a soil's acidity or alkalinity, Calcium and Magnesium. The lesser chemicals in your soil that raise PH are Potassium and Sodium. If your soils are acidic you will want to lime them and the lime you add will be a combination of Calcium and Magnesium. There are different kinds of lime... high Calcium lime which by its name describes that it is mostly Calcium and dolomite lime which is high in Magnesium.

Of all the things you need to find out about your soil, acidity and Calcium to Magnesium ratios are at the very top of the list. Why is the Calcium to Magnesium ratio so important? I will tell you about a farm I bought a dozen years ago. The first thing I did was have a soil test done on all the fields and the numbers that came back were disturbing. The soil's acidity was at 6.0 which wasn't too terrible but the Calcium to Magnesium ration was 3:1. Ideally you want the ratio to be 7:1. My soil was severely Magnesium poisoned. With this very high level of Magnesium the Potassium in the soil was

Survival Garden Secrets

not going to be available as the Magnesium was binding it all up. I found tons of empty old bags of high Potassium fertilizer stuffed in the corner of the barn. I am sure year after year the old farmer had tested the soil and found it deficient in Potassium and year after year he spent huge amounts of money to spread Potassium on the fields... only to find it was missing the next time he tested. Simply by spreading high Calcium lime on the fields the tens of thousands of pounds of Potassium per acre that were always there suddenly became available for the plants.

The bad news is Calcium as a general rule gets washed out of the soil. If you are in the mid-west or eastern part of the United States you will have to reapply it every year or two or three. If you live in the western parts of the United States you may have too much lime on your ground and you will have to raise its acidity with organic material. The good news is calcium is pretty darn cheap and most farm stores sell fifty pound bags for a couple dollars per bag.

I will repeat this so you get it clearly. I put high calcium lime on my fields which raised the calcium to magnesium ratio which caused the hidden potassium to suddenly appear and be bio-available. Potassium is considered one of the big three. Nitrogen, Phosphorus, and Potassium. It is the third element or "K" listed in NPK fertilizer and is very important to plant growth.

Calcium raises soil PH and corrects soil acidity. If your soil is too alkaline with a PH above 7 then you can lower your PH by adding Sulfur.

Calcium is used for building cell walls and many plants especially legumes use more calcium than phosphate.

Another important nutrient is sulfur. One of the draw backs of low sulfur fuels being sold today is that "acid rain" was actually good for most farmers and most farm fields in America are low in sulfur. Almost makes you wish they would start up some high sulfur coal burning plants down the road doesn't it? My own soils have shown to need both Calcium and Sulfur so I have used Gypsum or Calcium Sulfate which does not affect PH much. Gypsum is what most interior home walls are made from in the form of drywall and plaster. Gypsum like high calcium lime is pretty inexpensive and very cost effective for using in your soils.

How do you know what your calcium to magnesium ratio is and if your sulfur levels are low. SOIL TEST. The last time I did a soil test it cost me about \$35. Have an extensive soil test done by a quality testing facility. To do a soil test. walk around to different areas of your garden and dig small holes down to about 7 inches deep. mix all the soil in one bag and then take out a sample of mixed soil to give you a good average. Pack it in a small box or large envelope and send it to the lab.

If you are going to run blind, which I don't recommend, then I don't think most will go wrong adding some gypsum and or high calcium lime as a general rule. But you may be the contrary one whose soil is the opposite so test your soil.

Survival Garden Secrets

Optimal PH is not 7 as many have said and printed. A PH of 6.2 or 6.3 for a general rule is probably the best all around level you can look for. I would not be too upset by a 6.0 - 6.5 as these PH levels are in a good useable range. Some plants prefer higher PH and some prefer lower. This is a general target PH that is suitable for the largest number of crops you will want to grow in your survival garden. Why the slightly higher acidity? Because it will help to break down minerals and make them more bio available such as Phosphorous which needs acid to free it for plant use..

Chapter 5

The Compost Pile

It is not a good plan to put fresh or even somewhat aged manure directly into your garden. If you have ever seen animals in a pasture, the grass grows greenest and lush where the animals drop their manure. But you will not see the animals eat that grass. Learn that lesson because there are things in the manure that are absorbed directly into the plants that you don't want to eat.

Best bet is to compost your manure and other organic materials. Compost is all about having a proper balance of Nitrogen and Carbon. Manures are high in Nitrogen. Hay, straw, wood chips, and leaf material are high in Carbon. A balance of Carbon to Nitrogen is needed for proper microbe action to break down the organic material into good useful soil.

It has been my experience that fallen leaves gathered in the fall make the absolute best and richest compost material for productive gardening. If you don't have access to manures the Nitrogen levels of your compost pile can be raised by adding green material such as grass or other green vegetation.

Survival Garden Secrets

A Carbon to Nitrogen balance of 30:1 is a good starting point which will lead to a finished compost ration in the area of 15:1 or even down to 10:1. No need to get worrisome over the ratios. The main point is to have a reasonable mix of high carbon and high nitrogen materials. I have seen piles of wood chips compost eventually, fixating nitrogen out of the air over time to meet the needs of the pile decomposing. If you have a good mix your compost pile will heat up and take off and compost in good manner.

You will want to keep your compost pile slightly moist and keep it well mixed. Do not water log your compost pile. I also recommend you protect your compost pile from the weather a little so that a good portion of the valuable nutrients are not washed out in the rain and lost.

Turn your compost pile over once a week. It's good for mixing it up to get everything composted well and also slows over heating. Turning over more than once a week is counterproductive.

If you do it right then you should have nice looking compost about a month from the time you started. Ready to apply to your garden. You can side dress your plants or use some of it in making compost tea. This can be done as simply as filling a five gallon bucket $\frac{1}{4}$ of the way full with compost then adding water til the bucket is about $\frac{3}{4}$ filled. Use a stick to stir it up good for a few minutes and water your plants from the bucket. One can devise much more elaborate methods but

this works well for us. Any solids left in the bucket I use to side dress the plants.

In the fall I take my children out into the woods and we fill garbage bags full of leaves to bring back for the compost pile. If you have a manure source this is a good time to also get manure and mix it with the leaves. A lean to building can be set up over the compost pile to protect it from the elements. A corner of the garden works good in the fall and it can be moved to a different corner each year. with the last corner being used for growing a heavy feeding plant like corn.



Sawmills make a lot of high carbon sawdust

Survival Garden Secrets

We spread our wood ash from heating our home directly on our garden but the ashes could also be mixed into the compost pile. Just be sure the ash is cold and there are no live coals left. One can also mix seaweed and fritted trace elements into the compost pile instead of applying directly.

If you don't add wood ashes it can be a good plan to add roughly two pounds of lime per cubic yard of compost. Adding roughly a pound of rock phosphate per cubic yard also improves the compost.

Some like to use an inoculant to start the compost pile off on the right foot. You can usually find these at a local garden center. These designer bacteria and microbes are well proven but your compost pile should be fine just going with what is in the local soil. Personally, I just throw a shovel or two of dirt into the compost to help it on its way. If you built a reasonably good pile of material and it is moist it will start composting no matter what you do.

Chapter 6

Preparing the Soil

If you can, till your soil in the fall. I prefer a rotary tiller but have turned gardens over with nothing more than a shovel. We own 3 or 4 rear tine tillers. Do not waste money on a front tine tiller. They are evil pieces of machinery that will break you up better than they break up the soil. I also have a small tractor with a three point hitch and 5 foot tiller attachment. I can till a 1/4 acre garden with the tractor in about 15 minutes or with a walk behind rear tine tiller in about 6-8 hours. Old time farmers with plow and horse would turn over about an acre a day so one can see how much nicer a small diesel tractor and 5 foot tiller attachment can be.

I also like to put composted material and manures on during the fall to give them time to settle and mellow. In the spring I will usually till the garden another 2 or 3 times before planting to kill down the weeds and grasses that grow in the spring. We have 2 main gardens of about 1/4 acre each and then an additional 5 small garden areas for specialty plants like strawberries. With times the way they are we are looking to increase our garden areas a little more each year. In the

Survival Garden Secrets

past we mostly just grew stuff for our family and neighbors but with tougher economic times I expect we will be doing more selling of produce for a few extra dollars and to have the extra buffer.

In the spring we also usually add a few 50lb bags of high calcium lime. Gypsum makes a great substitute for the highcal lime as most soils are sulfur deficient, especially in the southern areas of the country. Every few years I also like to add some seaweed and fritted trace elements. FTEs are a great add to the garden and I will cover that more later.

My last tilling is done the day before we plant our garden which is usually in late May because we are located in a very northern climate.

Your soil may not have them but our one garden has had a few huge boulders that were too big to move. The best I was able to do was dig a big hole next to one and roll it into the hole and bury it back down. Sure enough, after a number of years it made it back to the surface to do damage to the tiller. At that point I cleared an area around it and lit a bonfire on it. The fire helped to fracture the boulder due to the moisture still in it. I then poured cold water on it. Be careful if you do this as it can unleash some chaos. I then finished it with a big sledge hammer and was able to move it out piece by piece.

Something we add during the winter is the wood ash from our wood stove. Having burned wood for our sole heat source for the last twenty some years we have been able to

add quite a bit of ash. I personally have not noticed if it helps or not but articles I have read suggest that the fertilizer value of wood ash is worth the price of the wood even if you had to purchase it making the heat free. Being a cheapie we mostly just go in the woods and cut it up ourselves for just the cost of gas oil and chains. We spread the wood ash on top of the snow over the garden and let it soak in come spring as the snow melts and the ground thaws.

One mistake I made many years ago was to fence a horse over our garden. The garden area when we bought that house looked no different from the hard packed gravel in our driveway. I spent 4 hours solid until my hands blistered trying to till it the first year with a rented front tine tiller. I was only able to get about 1/10 of the garden area tilled. It was like tilling concrete. The first year's growing wouldn't have kept a church mouse alive. That winter we kept my wife's horse fenced in over that 1/4 acre thinking it would help add organic material and some fertility. If possible it seemed to only make the garden area even more hard packed. We would have been much better off setting up a composting area for the manure and adding it to the garden later.

Something to make note of: If you have not tilled an area for a garden the year before, the land will be much harder to till. I always use the tractor with the big tiller on a new piece of garden area or an old garden area that was not tilled the year before. The walk behind rear tine tillers are best for cultivating between rows and tilling previously tilled land. Using them to break new ground is very hard on the body and tiller.

Chapter 7

NPK

NPK stands for Nitrogen, Phosphorous, and Potassium. They are considered the big three in fertilizers. When you buy commercial fertilizer you will see three numbers on the front. They might look like this... 15-5-10. That represents the percentage of each nutrient in the fertilizer. 15% Nitrogen, 5% Phosphorous, and 10% Potassium. If you made your own compost, a rough estimate of finished compost for NPK is 3-3-3.

Nitrogen is a tricky substance. As discussed earlier manure is high in Nitrogen. It comes from the air. It is stable in many different forms from urea to ammonia. and eventually returns to the air. There are also Nitrogen fixing bacteria that can grab the Nitrogen out of the air and place it in your soil for your plants use. While it may be cost effective for farmers to buy Nitrogen and add it to their fields for corn crops, farmers also use soybeans in rotation with corn to gain the benefits of the increased Nitrogen that is fixed in nodules at the roots of the soybean plants by bacteria they were inoculated with.

If you feed your soil by adding good amounts of compost to it, the Nitrogen fixing bacteria in your soil can make up what

little short fall your garden may have for nitrogen. The one thing I do recommend is if you are planting sweet corn put it in your most fertile area as it is a heavy feeding plant. Most other plants do not have as high a requirement of Nitrogen and should be fine. Compost is important here. If you are using a foliar spray some of the Nitrogen will come from the spray also.

The second "major" nutrient is Phosphorous. Again Compost is important here and will go far in providing most of the phosphorous your plants need. As stated earlier a slightly acid soil aids the bio-availability of phosphorous. Acid breaks down rock phosphate and phosphorous becomes available as plant material breaks down. All plant tissue contains phosphorous so compost can't be stressed enough. If you live in a "wet" area that receives a lot of rainfall you may need to pay extra attention to phosphorous as soils in those areas tend to become phosphorous deficient. If you are severely phosphorus deficient then good old single super-phosphate fertilizer may be a good addition. Single super phosphate is made with 50 percent Calcium Sulfate (Gypsum) which also helps to also feed the soil with Calcium and Sulfur. Single super phosphate is close to PH neutral so no worries about it upsetting your soils PH.

I have read stuff that suggests one can have too much phosphorous but I can tell you from my personal experience on a small garden plot I tested after years of adding compost made from mostly leaves. The soil test came back with phosphorous levels off the charts but I never had any problem growing stuff. I believe the high organic levels of the soil and the fact that most of it was held in an organic

Survival Garden Secrets

reservoir kept the garden from ever having problems and it always was phenomenally productive.

Lastly we have Potassium. Soils are very rarely ever deficient of potassium. But that does not mean your plants are not potassium deficient. As I stated earlier I had my own fun on a farm with potassium not being available because of the excessive magnesium in the soil.

The most common form of potassium fertilizer is potassium chloride also known as muriate of potash. You may recognize potassium chloride as a salt substitute or from sports drinks. Keep in mind it is a salt. What is left after the potassium is separated is chloride. Chloride while essential for your growing plants is damaging to bacteria in large quantities. This means the residue is killing life in your soil. Again this is showing the value and importance of composting for your garden instead of relying on chemical band-aids that are doing harm to one area while fixing the other. Keep in mind if you add the wood ashes from your wood stove to your garden like we do you are replenishing potassium. Wood ashes contain about 6 percent potassium. A secondary source for potassium is from naturally occurring deposits of potassium sulfate (also known as sulfate of potash.) I would personally use potassium sulfate over potassium chloride.

You may be reading this and asking, “are all these sulfates good for the soil?” Generally I would have to answer yes and restate most soils in America are sulfur deficient.

Chapter 8

Micro Nutrients

There are ten major "micro nutrients" after Calcium, Sulfur and Magnesium (which we already touched upon.) They are Iron, Chloride, Manganese, Boron, Copper, Molybdenum, Cobalt, Iodine, Nickel, and Zinc. While these nutrients are needed in only small quantities, deficiencies in them will limit plant growth tremendously.

Micro nutrients are used as catalysts in plant growth so while a lot of a micro nutrient is not needed, not having the micro nutrient can cause severe stress and lack of growth in plants. Micro nutrient deficiencies can cause problems in your soil as well. Nitrogen fixing bacteria use Iron and Molybdenum as catalysts to fixate Nitrogen out of the air and into your soil in the form of ammonia. No Iron or Molybdenum then no ammonia which corn farmers shoot into their fields at great expense.

Two things we do to take care of micro nutrient shortages is add seaweed and fritted trace elements (FTEs.) I think in time we will come to understand there are 40 or 50 micro

Survival Garden Secrets

nutrients that aid in plant growth and the seaweed adds many if not all of those. The elements that are needed in larger amounts are carried in the fritted trace elements.

I am not going to go into a lengthy explanation on each of these minerals as I would personally forget most of it as soon as I turned the page myself. Suffice it to know that each of these micro nutrients perform a valuable and necessary function in your plants growth. They are needed and our job is to provide them so our gardens can provide for us.

Testing for every trace mineral's level can be a bit expensive and is most likely not very cost effective. It can be cheaper and simpler to just till the FTEs and seaweed into the ground and call it good knowing you now have reasonably good levels of the micro nutrients your plants will need.

I do have to mention I have found it hard to find FTEs and 50lb bags of seaweed and have to drive about 400 miles round trip to procure them. The good news is once you put them in the soil their effects will be felt for years. Again having high organic material levels in your soil from composting will help by providing a trap to catch these minerals and store them for use.

Some may be asking what are fritted trace elements. They are trace elements combined into a soft glass frit that look like coarse sand. FTEs release the minerals for use slowly over time.

I add the seaweed and FTEs just before planting.. but long after adding the Calcium which is done at the first tilling of the spring.

The Bible admonishes not to eat the kid in the mother's milk. Roughly translated that means don't eat cheeseburgers. You may be asking why? The answer is Meat is high in iron and cheese is high in calcium. If you eat cheese alone you get the calcium into your body and your bones grow and get stronger. Your teeth get stronger and so on. If you eat the hamburger alone you get the iron and your blood gets stronger. If you eat them together the iron and calcium bind and you get benefits from neither. Works the same with soil and plants. Apply Calcium separately.

Chapter 9

Phenotype and Genotype

This is where things can get pretty darn interesting. Genotype is the plant's predetermined growth according to its genetic code. Phenotype is the outward appearance of the plant. Phenotypic plasticity describes the plants ability to develop beyond its predetermined genotype. Plants from open pollinated seeds from what I have seen have much greater plasticity than plants from hybrid seeds.

Lets say you do everything right and suddenly your straight neck squash is 5lbs each instead of 1/2 lb each. The plant has extended its growth to fulfill its genetic potential. But something cool happens. Genetic assimilation of the phenotype carries into the Genotype, or inward genetic code, of the seeds from this plant. The next generation incorporates this new genetic potential as the standard and when you do everything right with its seeds you may end up with 10lb squash or 15lb squash from the seeds from the 5lb squash.

We have seen this in recent years as record after record for pumpkins has fallen as giant pumpkins have gone from

500lbs to now around 2000lbs in size.

This is a great reason for saving your own seeds when you are growing plants near their full potential. This is what survival garden secrets is all about. You can develop strains of plants that far exceed normal growth and production.

Understand what I am saying here. If you do things right you can unleash a rapid evolution of garden seeds which can help feed people around the world for years to come.



Start those children helping in the garden at an early age

Survival Garden Secrets

Back to the example of the pumpkins. Record pumpkin growers buy seeds from other record pumpkin growers. These accelerated seeds are highly sought after and bring a premium price in the range of \$1 per seed for a 500lb pumpkin to \$10 per seed from a 1000lb pumpkin and \$50 per seed from a 1500lb pumpkin.

Seeds from these large pumpkins grow large pumpkins. They are not a new variety as much as they have had their genetic codes potential realized and actuated.

Imagine how much more food can be grown if everyone learned these survival garden secrets and used seeds that have been actuated with this knowledge.

We are talking about quantum leaps in the ability of the world to grow food and possibly the end of malnutrition and starvation on this planet.

Plants that are grown in near ideal conditions are also going to have much higher levels of vitamins and minerals. Better plant nutrition will also lead to high levels of human health and possibly the actuation of our potential as well.

Chapter 10

Weeds

Nature abhors a vacuum. Weeds fill the vacuum on idle soil. I am going to give you a theory that was given me by my cousin Dan. If your soil is iron deficient then you will grow weeds that are iron sensitive. If your soil is deficient in calcium your soil will grow weeds that are calcium sensitive.

What this means is plants that cannot tolerate high levels of iron will grow where iron is deficient. Sounds pretty straight doesn't it?

The reason a plant is iron sensitive is because it can find and fix iron out of the soil better than other plants and if the soil is iron rich it gets too much iron. If a plant is calcium sensitive it is good at finding and making available calcium in low calcium soils.

Here is where we take the big step... This means that weeds fix your soil over time. Making iron available where it wasn't available before, or calcium, or sulfur, or whatever.

Survival Garden Secrets

In other words weeds while you are growing your garden are a menace to the health and viability of your plants but when your garden is done and put to rest letting the weeds grow some at the end of the season before adding compost, manure, and tilling your soil under with the weeds can be beneficial. The one caveat I give is to do what you can to keep them from going to seed as weeds produce many times the order of seeds than your garden plants.

Also by learning what weeds are sensitive to what minerals you can make adjustments to the fertilization of your gardens to compensate for the deficiencies. If you are interested in learning how to read the weeds there are good books on the subject. Suffice it to say that weeds are like a report card and can tell you how you are doing. Some weeds only grow in acidic soil. Some wont grow in an alkaline soil. Some like Lambs quarter or Pigweed give an indication that you're doing things pretty well and your soil has good balance of minerals and organic matter.

Chapter 11

Manure Tea

The following is taken from a book titled “Ten Acres Enough: written back in 1864 which is available from www.outlawbooks.com

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I don't think I can say the following half as well as the author did. I will how ever point out that I believe it would be better to make “Compost Tea” and that is the only thing I would change out of the entire chapter. Putting liquid manure directly to plants will leave plants up taking harmful bacteria and other nasties.

Excerpt from Ten Acres Enough - 1864 - James Miller

Liquid manures-An Illustration

No sooner had the autumn of my second year fairly set in, and the leaves fallen, than I turned my attention more closely than ever to the subject of providing an abundant supply of manure, in hopes of being able to devise some plan by which to lessen the large cash outlay necessary to be annually made

for it. I did not grudge the money for manure, any more than the sugar on my strawberries. Both were absolutely necessary; but economy in providing manure was as legitimate a method of increasing my profits as that of purchasing it. I knew it must be had in abundance: the point was, to increase the quantity while diminishing the outlay. Thus resolved, I kept Dick more actively at work than ever in gathering leaves all over the neighborhood, and when he had cleaned up the public roads, I then sent him into every piece of woods to which the owner would grant me access. In these he gathered the mold and half-rotted leaves which thickly covered the ground. I knew that he would thus bring home a quantity of pestiferous seeds, to plague us in the shape of weeds, but by this time we had learned to have no fear of them. By steadily pursuing this plan when no snow lay on the ground, he piled up in the barnyard a most astonishing quantity of leaves. There happened to be but little competition in the search for them, so that he had the ground clear for himself. All this addition to the manure heap cost me nothing. To this I added many hogsheds of bones, which the small boys of the neighborhood gathered up from pigpens, slaughter-houses, and other places, and considered themselves well paid at ten cents a bushel for their labor. These were laid aside until the best and cheapest method could be devised for reducing them to powder, and so fitting then for use.

In the meantime, I frequently walked for miles away into the country, making acquaintance with the farmers, observing their different modes of cultivation, what crops they produced, and especially their methods of obtaining manures. As before observed, farmers have no secrets. Hence many

valuable hints were obtained and treasured up, from which I have subsequently derived the greatest advantage. Some of these farmers were living on land which they had skinned into the most squalid poverty, and were on the high-road to being turned off by the sheriff. Others were manured at a money cost which astonished me, exceeding any outlay that I had made, but confirming to the letter all my preconceived opinions on the subject, that one acre thoroughly manured is worth ten that are starved. Of one farmer I learned particulars as to the history of his neighbor, which I felt a delicacy in asking of the latter himself. Some instances of success from the humblest beginnings were truly remarkable; but in all these I found that faith in manure lay at the bottom.

One case is too striking to be omitted. A German, with his wife, and two children just large enough to pull weeds and drive a cow, had settled, seven years before, on eight acres, from which the owner had been driven by running deeply in debt at the grog-shop. The drunkard's acres had of course become starved and desolate; the fences were half down, there was no garden, and the hovel, in which his unhappy family was once snugly housed, appeared ready to take its departure on the wings of the wind. Every fruit-tree had died. In this squalid condition the newly arrived German took possession, with the privilege of purchasing for \$600. His whole capital was three dollars. He began with four pigs, which he paid for in work. The manure from these was daily emptied into an empty butter-firkin, which also served as a family water-closet, and the whole was converted into liquid manure, which was supplied to cabbages and onions. A gentleman who lived near, and who noted the progress of this industrious man, assured me that even in the exhausted soil

where the crops were planted, the growth was almost incredible. On turnips and rutabagas the effort was equally great. Long before winter set in, this hero had bought a cow, for while his own crops were growing he had earned money by working around the neighborhood. He readily obtained credit at the store, for he was soon discovered to be deserving. When away at work, his wife plied the hoe and acted as mistress of the aforesaid butter-tub, while the children pulled weeds. His cabbages and roots exceeded any in the township; they discharged his little store-bills, and kept his cow during the winter, while the living cow and dead pigs kept the entire family, for they lived about as close to the wind as possible.

This man's passion was for liquid manure. If he had done so much with a tub, he was of course comparatively rich with a cow. Then he sunk a hogshead in the ground, conducted the wash of the kitchen into it, and there also emptied the droppings from the cow. It was water-closet for her as well as for the family. It is true that few of us would fancy such a smelling-bottle at the kitchen door; but it never became a nuisance, for he kept it in-noxious by frequent applications of plaster, which improved as well as purified the whole contents. It was laborious to transport the fluid to his crops, but a wheelbarrow came the second year to lessen the labor. There happened, by the merest accident, to be a quarter of an acre of raspberries surviving on the place. He dug all round these to the depth of eighteen inches, trimmed them up, kept out the weeds, and gave them enormous quantities of liquid manure. The yield was most extraordinary, for the second year of his location there he sold \$84 worth of fruit. This encouraged him to plant more, until at the end of four years

he had made enough, from his raspberries alone, not only to pay for his eight acres, but to accumulate a multitude of comforts around him. In all this application of liquid manure his wife had aided him with unflagging industry.

It was natural for me to feel great interest in a case like this, so I called repeatedly to see the grounds and converse with the German owner. As it was seven years from his beginning when I first became acquainted with him, his little farm bore no resemblance to its condition when he took possession. There were signs of thrift all over it. His fences were new, and clear of hedge-rows; his house had been completely renovated; he had built a large barn and cattle-sheds, while his garden was immeasurably better than mine. Every thing was in a condition exceeding all that I had seen elsewhere. His two girls had grown up into handsome young women, and had been for years at school. All this time he had continued to enlarge his means of manufacturing and applying liquid manure, as upon its use he placed his main dependence. He had sunk a large brick cistern in the barnyard, into which all the liquor from six cows and two horses was conducted, as well as the wash from the pig-pen and the barnyard. A fine pump in the cistern enabled him to keep his manure heap constantly saturated, the heap being always under cover, and to fill a hogshead mounted on wheels, from which he discharged the contents over his ground. The tub and underground hogshead with which he commenced were of course obsolete. If it be possible to build a monument out of liquid manure, here was one on this farm of eight acres. Its owner developed another peculiarity – he had no desire to buy more land.

Survival Garden Secrets

This man's great success in a small way could not have been achieved without the most assiduous handling of manure, and this husbanding was accomplished by soiling his cow. As he increased his herd he continued the soiling system; but as it required more help, so he abandoned working for others and hired whatever help was necessary. The increase of his manure heap was so great that his little farm was soon brought into the highest possible condition. In favorable seasons he could grow huge crops of whatever he planted. But his progress was no greater than has repeatedly been made by others, who thoroughly prosecute the soiling system.

A frequent study of this remarkable instance of successful industry, led me to conclude that high farming must consist in the abundant use of manure in a liquid state. A fresh reading of forgotten pages shed abundance of new light upon the subject. The fluid excretia of every animal is worth more than the solid portion; but some are not contented with losing the fluid portions voided by the animals themselves, but they suffer the solid portions of their manure to undergo destructive fermentation in their barnyards, and thus to become soluble, and part, by washing, with the more valuable portions. Now it is well known that the inorganic matter in barnyard manure is always of a superior character, therefore valuable as well as soluble; and this is regularly parted with from the soil by those who permit the washing to be wasted by running off to other fields or to the roadside. I have seen whole townships where every barnyard on the roadside may be found discharging a broad stream of this life-blood of the farm into the public highway. This manure leap must be liquified before the roots of the plants can be

benefited by the food it contains. No portion of a straw decomposed in the soil can feed a new plant until it is capable of being dissolved in water; and this solution cannot occur without chemical changes, whose conditions are supplied by the surroundings. Such changes can be made to occur in the barnyard by saturating the compost heap with barnyard liquor. All that nature's laws would in ten years effect in manures in an ordinary state, when ploughed into the ground, are ready, and occur in a single season, when the manures are presented to the roots of plants in a liquid form.

A suggestion appropriate to this matter may be made for the consideration of ingenious minds. Every farmer knows that a manure heap, when first composted, abounds in clods of matted ingredients so compact, that time alone will thoroughly reduce them to that state of pulverization in which manure becomes an available stimulant to the roots of plants. Fermentation, the result of composting or turning over a manure heap, does measurably destroy their cohesion, but not sufficiently. Few can afford to let their compost heaps remain long enough for the process of pulverization to become as perfect as it should be. Hence it is taken to the field still composed of hard clods, around which the roots may instinctively cluster, but into which they vainly seek to penetrate.

Some careful farmers endeavor to remedy this defect by laboriously spading down the heap as it is carted away. The operation is a slow one, and does not half prepare the manure for distribution. A year or two is thus required for these clods to become properly pulverized, for they remain in the soil

inert and useless until subsequent ploughings and harrowing reduce them to powder.

As farmers cannot wait for time to perform this office in the manure heap, they should have machinery to do the work. A wooden cylinder, armed with long iron teeth, and revolving rapidly in a horizontal position, with the manure fed in at the top through a capacious hopper, would tear up the clods into tatters, and deliver the whole in the exact condition of fine powder, which the roots of all plants require. To do this would require less time and labor than the present custom of cutting down with either spade or drag. Better still, if the manure could be so broken up as it is taken from the barnyard to the compost heap; the process of disintegration thus begun would go on through the entire mass, until, when carted away, it would be found almost as friable as an ash heap. It is by contact of the countless mouths of the roots with minute particles of manure that they suck up nutriment, not by contact with a dense clod. Hence the astonishing and immediate efficacy of liquid manure. In that the nutriment has been reduced to its utmost condition of divisibility, and when the liquid is applied to the soil, saturation reaches the entire root, embracing its marvelous network of minute fibers, and affording to each the food which it may be seeking.

We cannot use liquid manures on a large scale, but thorough pulverization of that which is solid is a very near approach to the farmer. Immerse a compact clod in water, and the latter will require time to become discolored. But plunge an equal bulk of finely pulverized manure into water, and discoloration almost instantly occurs. Diffusion is inevitable from contact with the water. Now as rain is water, so a heavy shower falling

on ground beneath which great clods of manure have been buried, produces in them no more liquefaction than it does on that which has been dropped in a bucket. On the other hand, if the ground be charged with finely pulverized manure, a soaking rain will immediately penetrate all its com-minuted particles, extract the nutriment, and deliver it, properly diluted, into the open mouths of the millions of little rootlets which are waiting for it.

Practically, this is liquid manure on the grandest scale. But no one can quickly realize its superior benefits from a newly buried compost heap, unless the latter has been effectually pulverized before being deposited either in or upon the ground.

I was so impressed by the example of the thriving German referred to, that I resolved to imitate him. He had given me a rich lesson in the art of manufacturing manures cheaply, though I thought it did not go far enough. Yet I made an immediate beginning by building a tank in the barnyard, into which the wash from stable, pig-pen, and yard was conducted. This was pumped up and distributed over the top of the manure heap under the shed, once or twice weekly. A huge compost heap was made of leaves, each layer being saturated with the liquor as the heap accumulated, so that the whole mass was moist with fluid manure. It was never suffered to become dry. Now, as in the center of a manure heap there is no winter, decomposition went on at a rapid rate, especially among the leaves, stimulated by the peculiar solvents contained in the liquor. Thus, when taken out for use in the spring, both heaps had become reduced to a half fluid

mass of highly concentrated manure, in a condition to be converted, under the first heavy rain, into immediate food for plants. Though my money-cost for manure next season would be greater than before, yet my home manufacture was immense. As I was sure that high manuring was the key to heavy crops and high profits, so my studies, this winter, were as diligently pursued in the barnyard as in the library, and I flattered myself that I had gathered hints enough among my neighbors to enable me, after next year, to dispense entirely with the purchasing of manure.

But I had other reasons for avoiding the purchase of manure—none can be purchased clear of seeds, such as grass and weeds. I have already suffered severely from the foul trash that has been sold to me. One strong warning of the magnitude of the nuisance was given by the condition of my strawberries. A small portion of them was covered, at the approach of winter, with litter from the barnyard, and another portion with cornstalks. The object was protection from the cold; and it may be added that the result, so far as protection goes, was very gratifying. But when the covering was removed in April, the ground protected by the barnyard litter was found to be seeded with grass and other seeds, while that protected by the cornstalks was entirely clean. During a whole year I had the utmost difficulty to get the first piece of ground clear of these newly planted pests and am sure that the labor thus exerted cost more than the strawberries were worth. From this sore experience I have learned never to cover this fruit with barnyard litter. When they are covered, cornstalks alone are used. They are drawn back into the bales in April, where they serve as a mulch to keep down the weeds, and ultimately decay into manure. Though not so neat

to look at, nor so convenient to handle as straw, yet they answer quite as well and at the same time cost a great deal less.



A disc like this can help prepare large areas quickly

Chapter 12

Foliar Feeding is Key

About a dozen years ago we purchased a farm from an old farmer. It was early May and the old apple tree in the yard was beginning to put out leaves. The old farmer was still living in the farm house and ended up helping me learn the equipment and land for the next month. He watched me with a smirk on his face as I put a motorized backpack sprayer on my back and fire it up. His older brother was visiting at the time so the two of them elbowed each other in the ribs at the new style farmer.

My son who was twelve at the time said the old farmer even leaned over and whispered to him that the old apple tree had not set an apple in over seven years. That fall when the apple tree was covered in bushels of apples the old farmer asked for some of my spray for use on his new apple trees at his new house.

The respiratory system of plants and specifically the stomata's ability to uptake nutrition and the plants ability to trans-locate those nutrients is key to accelerated plant growth and production. By using the stomata we bypass the soil

which can be fickle due to possible soil imbalances and microbes eating before plants. The soil is important and great soil will produce great plants. Consider foliar feeding the great equalizer if your soil isn't perfect and consider foliar feeding a way of making great plant growth even greater.

Testing of foliar feeding using radioactive isotopes has determined that nutrients are trans-located to root zone and then back up through the plant and that plants achieved uptake of nutrients as much as 10 times better through the leaves than through the roots.

As stated earlier the respiratory system of the plant is generally most active in the early morning while the CO₂ levels are highest and the dew is still on the leaves. This is the best time for applying nutrients you want the plant to uptake.

Keep in mind this can also be the best time for herbicide use against weeds. Growing food at a garden level does not have to rely on herbicides but once one gets to a large farm level if herbicides are used then spraying in the early morning which allows for the rapid uptake of the spray can cut herbicide usage in half and the farmer does not need to worry about rain as the spray is quickly absorbed. Imagine this little bit of knowledge being applied worldwide. It means a reduction of poisoning our earth in a massive way.

American agriculture has become about tonnage and number of bushels. Fertilizer programs have been designed with only

Survival Garden Secrets

this in mind. Very little attention has been given to nutritional value of what is grown or that healthier plants have natural immunities towards diseases and insect damage instead relying on the chemical industry to provide those protections.

Foliar feeding of plants was first introduced in 1951. Since that time many excellent studies have been done testing its effectiveness with varying success. Some of the results have been absolutely incredible. However there appears to be a sinister effort to keep foliar fertilizers from being used.

Would someone want to limit our ability to raise our own foods? Is it possible there is a group of people who don't want you raising healthy more nutritious food for your family? Who don't want you to be more self-sufficient? Who want to keep a monopoly on the food you eat and seed sales and don't want people to find out that open pollinated seeds are better?

Right now many states ban the sale of foliar fertilizers. Except they are sneaky like snakes. They don't ban them outright. They play a game. It goes like this.... First they have laws they claim to protect the people, requiring fertilizers sold in their state to be registered. When a company that produces a foliar fertilizer tries to register their product they are told it doesn't have enough NPK to be registered. Of course if more NPK were put in the foliar fertilizer it would kill the plant because of the superior ability of the plants to use foliar sprayed nutrients. So the bottom line is the state refuses to register it claiming its not a fertilizer but then

blocks its sale because fertilizers must be registered.

This is why I am by passing the bureaucratic snake helpers of the giant mega corporate agri-crooks and giving you the formula for the foliar fertilizer we use. No need to play their games because with this knowledge you are in control.

This foliar spray is totally organic (not saying certified that's up to you.) This spray uses nothing but natural organic products. I have been making this spray for my own use for a decade.

Keep in mind when spraying that you want to target the underside of the leaves most because that is where most of the stomata are. I have a motorized backpack sprayer but then I do a number of acres of spraying and some larger trees. A good gallon size hand sprayer with a pump on it can be purchased from farm supply stores for around ten dollars. I have even used little hand held plant sprayers from the department store for around a dollar or two. Any sprayer that makes a fine mist will work well.

Chapter 13

SGS Foliar Spray

OK... It's time for the secret SGS Foliar Spray... and here it is...

1 Part Shaklee Basic-H

8 Parts Fish Emulsion

3 Parts Seaweed

4 Parts Molasses

I mix this up in an old vitamixer we have and then use it by diluting 1 ounce into 1 gallon water for the finished spray. I like to put the spray concentrate into a bucket then violently fill it with water to help the mixing. You can use whatever mixing device you have as it mixes pretty readily. I put the basic H in last as it is a surfactant.

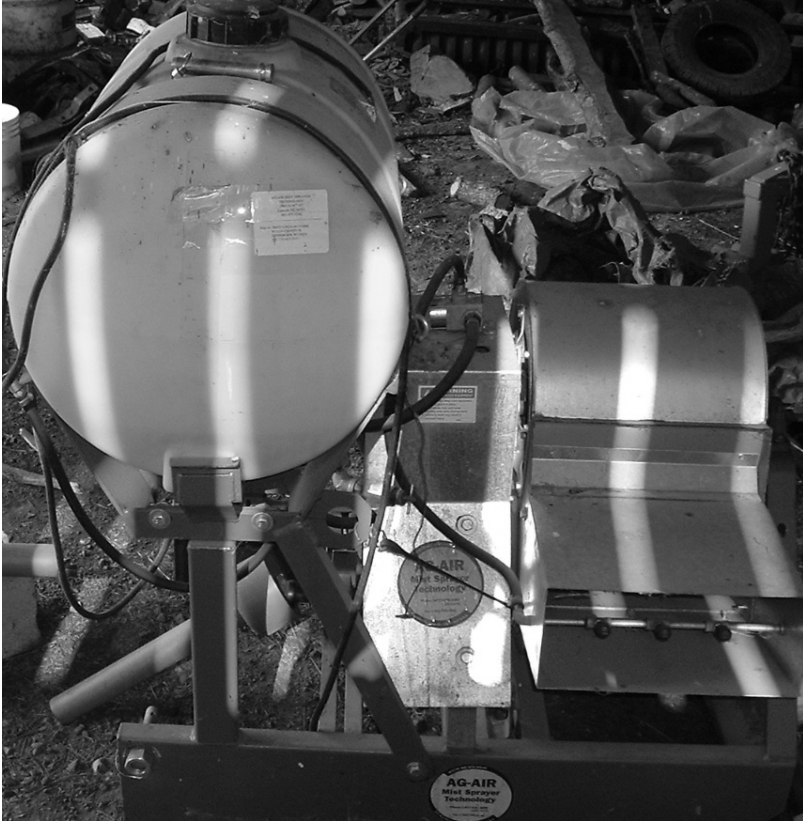
Basic H is made from soybeans and is 100 percent natural so this makes a natural no chemical foliar fertilizer spray that I have used myself for many years with excellent success.

I have found that younger plants prefer a slightly weaker mix and older plants prefer a slightly stronger mix. I spray once every week or two near the beginning of the season and as much as twice a week toward the end of the season. The plants take time to acclimate to the spray. I personally also mix in a foliar calcium spray into the spraying rotation as calcium must be fed separately due to its nature to bind with other nutrients. A spray I have used with great success is “Calcium-25” which can be purchased from www.calcium25.com

Don't fret about getting it exact. Each part plays an important role and being a little higher or lower in seaweed or fish..... should not make a huge hill of beans. Well, actually using it can make a huge hill of beans.. I make this up for myself at a cost of around \$8 per gallon but I also buy up a ton of materials at once and can make about 100 gallons at a time from my supplies. If you only need a gallon for the next ten years you may want to purchase a quality foliar spray already made. There are a lot of them out there and they all seem to claim theirs is superior. If you do want to buy a ready made foliar spray then I can recommend an excellent product I am familiar with and that is “Sonic Bloom.” You can buy Sonic Bloom online for about \$55 for 16 ounces. 16 ounces makes 32 gallons of spray and should last you a few years unless your garden is really huge. The website for sonic bloom is www.real-sonic-bloom.com

Something to note here... A little is good.. so is a little more better??? the answer is NO! .. Use the recommended doses. Think of it like thanksgiving dinner. Full is good over stuffed isn't.

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3 Point Sprayer used for spraying crops on our farm

Seaweed is an important part of this foliar spray. Seaweed contains auxins, gibberellins, and cytokinins which are plant hormones that promote accelerated growth and improved fruiting. Seaweed promotes high cytokinetic activity including cell enlargement and cell division. Foliar sprays containing seaweed have also proven to increase seed germination, fruit

quality and shelf life, increase yields and disease resistance. Seaweed also acts as a chelating agent that improves uptake of trace minerals within the plants.

Something we do for better seed germination is spray the seeds down with the diluted foliar spray and let them sit for about 8-12 hours and swell before planting. The seeds show a higher and quicker rate of germination when this is done.

Chapter 14

Open Pollinated vs. Hybrid and GMO

Think back to the short chapter on Phenotype and Genotype. If you skipped through it go back and read it again because its going to get real important. I am going to skip over the GMO foods and how dangerous they are. I am going to skip over the terminator genes that threaten mass starvation in the future and the patenting of life that God created and big corporations seek to enslave your children over. What I am going to point out is that the last time man tried to re-engineer God's creation... . well... God destroyed man and the earth. Enough said.

What I am going to key on is open pollinated vs hybrid seeds. Most are familiar with the ideas of hybrids where different strains of seeds are crossed to bring out the hybrid vigor. The generally accepted problem with these seeds is that they do not breed true and saving them usually produces an inferior crop the following year.

Hybrid seed is also incredibly expensive. My neighbor paid close to \$110 a bushel for corn seed in 2006. I can see a return to open pollinated seed for even corporate farmers soon at those prices. and a return to farmers saving seed year to year. How can anyone justify paying \$110 a bushel for

seed when the crop only pays \$2 a bushel when its grown???
OK I admit its not \$2 now.. but it has been very recently.

Hybrid seeds tend to produce large uniform crops compared to open pollinated seeds but there is question to the quality of the food produced. An example is the report that hybrid corn cannot uptake certain nutrients and therefore is nutrient deficient and does not produce proper vitamins like B12.

While hybrid crops appear to out produce non-hybrid varieties my experience has been the exact opposite. Hybrid crops tend to have fairly uniform production and will generally out produce open pollinated varieties on average to poor soil. Open pollinated strains grown in rich environments far exceeds the hybrid varieties. Even more exciting is the seeds from these huge producing crops have now been genetically coded with the accelerated production much like the example of the pumpkins. This is not something you can do with hybrids and one of the important reasons to use open pollinated seeds and save your seeds.

This is where it gets really exciting to see how you can advance seeds in growth and production and where the bag of tools you learned here will aid you in producing huge amounts of food even from just a few plants.

I am restating this so you get it. Non-hybrid or open pollinated seeds produce more nutritious food in higher quantities and when grown in optimal conditions can experience genetic acceleration to become “super seeds” that

Survival Garden Secrets

produce even more and better food. Better nutrition makes for healthier and more intelligent people. We are talking about a revolution in evolution.

Chapter 15

What to Grow and Why

I have spent a good deal of time figuring this out for myself and the best and quickest answer I can give is ... grow what you will eat. For me personally this includes tomatoes, corn, green peppers, cantaloupe, watermelon, broccoli, squash, dry beans, green beans, peas, carrots, cucumbers, lettuce, cabbage, okra (my wife likes it), hot peppers, onions, potatoes, asparagus and pumpkins.

Being in a northern climate here limits long season crops such as melons, celery, and peppers. We eat a lot of green peppers so I still plant them but do not count on them being productive. We move some of the pepper plants into pots and move them inside for the winter.

One thing to consider on plants like tomatoes is determinate versus indeterminate. Determinate plants have a fixed life cycle or number of days. Come the end of the season your tomato plants will die period. Generally determinate tomato plants are smaller bush style plants. If you plant indeterminate tomato plants then your tomato plants can be moved into a small greenhouse or put in a bucket and brought in and they can keep producing. In fact,

Survival Garden Secrets

indeterminate tomato plants can grow into something looking like tomato trees over time. For the continued productivity I generally choose indeterminate plants over determinate.

This is going to be a lot of opinions and a bit subjective but I am hoping you can glean some ideas for your plan. I personally don't like growing hot peppers because I can buy them cheap enough by the pound in the store compared to how much I use in a year. I also don't like small pickling cucumbers as a rule because the large cucumbers work good for the pickles I like and the small ones don't produce anywhere close to the amount the normal large cucumber plants produce.

Another main thought on crop selection is to choose crops that produce huge amounts of calories for survival and are long keeping. Potatoes are near the top of the list here along with carrots, beets, and cabbage. Potatoes are a bit tricky. My personal experience has been poor when growing potatoes on most soil. That being said when I have grown potatoes on really well prepared beds I have had excellent results. Potato farmers use an enormous amount of chemicals and sprays to keep their plants healthy, bug and disease free. Growing organically is tough and I have only had great results on really great soil.

One thought that stays in my mind is what did people in the past grow to survive. Potatoes, cabbage, beans and grains, come to mind. Grains can be grown on commercial farms much easier and cheaper than what I am going to grow in my garden so I just buy grains and store them. Potatoes we

covered and while they make excellent survival food and store well they are a bit fussy to grow. Carrots stand out well to me. Carrots can produce a large amount of food in a relatively small area. They have good nutrition and they can keep in the ground and can be pulled in the middle of winter and still eat well. My children love picking carrots when outside and just munching on them. I think they sometimes think they are being sneaky about it which I find funny. Carrots aren't real dense so far as calories at about 175 calories per pound but this is a little higher than most vegetables.

Cabbage is a pretty good keeper and we also use it some for canning like in piccalilli. A cabbage has about 120 calories per pound. Cabbage is nice to grow in northern climates as it is more tolerant of cold. We do have a bit of a problem with bugs hitting our cabbage also growing organically. I am told dill grown alongside cabbage helps.

I am not real fond of beets so we pretty much skip them. They can however be used to make sugar for your table or even in ethanol production. Think liquor in a self-sufficient society. But for me I wouldn't grow them to eat. They contain about 150 calories per pound. They are versatile and they keep pretty well.

Tomatoes are used by our family in massive amounts from spaghetti to pizza sauce, taco sauce, salsa, even a homemade version of tomato based vegetable drink. Tomatoes can be dried and powdered or boiled down and canned. Green tomatoes are used in the homemade piccalilli which is

Survival Garden Secrets

awesome on hotdogs and gets added to foods like potato salad. We grow a lot of tomatoes for this reason.

We use a big outdoor propane cooker and large stainless steel tank for cooking the tomatoes down. Remember to use stainless steel when cooking tomatoes as the acid will leach aluminum from aluminum cookware. Tomatoes have roughly 80 calories per pound.

Pumpkins and squash are prodigious at producing huge tonnage. The thought occurred to me that they might make a great survival food because they also keep well. The bad news is that a pound of pumpkins or squash has only 100 calories. While I don't care for eating tons of vine crops they produce huge amounts of food, keep well and can be put in breads and pies nicely.

Just be careful while using the assorted tools you learned here because one pumpkin or squash plant can take over an area larger than most peoples gardens.. personally I love it. We have also grown huge amounts of cucumbers in a small area and from a small number of plants. Cucumbers do not keep well but they can be pickled and canned which we do. I am very fond of refrigerator pickles which we include in the recipes section at the end of the book. Just keep in mind that cucumbers have even less caloric value than pumpkins or squash at around 65 calories per pound. Compare that to a large baked potato at 275 calories and you can see why potatoes are more of a survival food.

A lot of garden vegetables have low caloric values. Green

beans only provide about 85 calories per pound. The same for green peppers. A pound of corn has about 275 calories. Dried corn even more. This is why grains like corn wheat and rice are at the core of diets in the world.

Dried grains can be purchased cheap and stored for long periods of time and if you feel that things in the world are not stable this may be a good plan for your family. The idea behind our survival garden is to augment the stored grains with additional fresh food.

My wife makes a mean fried rice from rice we buy in 50lb bags. She dices up different fresh vegetables from the garden into the rice and it becomes a great base of a meal. Much better in a survival situation than eating straight plain white rice.

A surprise in the calories area are beans. A pound of dried pinto beans contain roughly 1350 calories. This is the same for Lentils. Where as I don't recommend growing grain, growing beans can be a great idea for your survival garden.

Beans can be used in Mexican style recipes and soups. Lentils can be made into soups or casseroles or even baked in a barbeque sauce. Millions of people have lived for centuries on not much more than beans and corn tortillas. Again it is important to see how people have survived in the past growing their own foods.

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My own experience in growing beans is that with proper nutrition for the plants they produce much larger plants with many more pods for the beans and much longer pods with a higher number of beans per pod. If your season is short you may run into problems getting the beans to dry down fully in the fall but if you are picking by hand its not quite as important for them to be fully dry for harvest as combining with a machine and you can spread them out inside and dry them the rest of the way.

Again if you save your seeds these bean seeds can produce plants that perform even better the following year if you do everything right. The fun part of this bag of tools and secrets.

Like grain crops you may decide beans are easier and cheaper to just buy in bulk. For our family we have a 4 row planter, cultivator and tractor and can drop in an acre or two easily and maybe yield 30 bushels per acre. For the small home gardener growing beans may not be as practical.

Chapter 16

Herbs

Herbs are nice to have in ones survival garden. They can be used for flavoring foods to being used medicinally. The following are a few herbs that are easy to grow with care and some can be grown indoors in small pots for use year round. Herbs can be very costly in the store so growing ones own can be a bit of a money saver. One might also grow herbs for selling as they produce a large amount of income from a small amount of space. Foliar feeding seems to increase the active ingredients in most herbs so you may find your herbs are “stronger” than what you at first expect. A good additional source of herb information is the booklet *American Medicinal Leaves and Herbs* available from www.outlawbooks.com.

Oregano is the first herb to mention as it is easy to grow and keep in mind spreads rapidly. It can used in Italian, Mexican and Greek cooking. A nice add for spaghetti sauces, chili, taco seasoning, fajitas, Greek salads and the list goes on.

Oregano is also reported to have antibiotic properties. Dry oregano for storage.

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Garlic adds flavor to everything. Good again for Italian, Mexican, and most middle eastern cooking. Garlic is propagated from bulbs and takes care to keep over the winter in a mesh bag like onions in a cool dark place or they can be strung together and hung. Garlic also is reported to have good health benefits.

Parsley is great for foods like meatloaf, spaghetti sauce, rice dishes, salads. Parsley takes a while to grow and doesn't winter well so start it indoors. Dry parsley for storage. As with most herbs parsley is very good fresh.

Rosemary is good with lamb and poultry. Rosemary grows well indoors. To store remove the leaves and dry.

Thyme is great for poultry, chili and bread stuffing. Thyme is good at self propagating but not as prodigious as oregano in my experience. Thyme grows well indoors also. Dry Thyme for storage.

Sage is used many places with Thyme such as for poultry seasoning. Sage is also good for bread stuffing. Sage can be grown outside but does not winter well. Sage is easily grown indoors. Dry the leaves for storage and then chop them to a powder. For chopping up we use a small food processor.

Cilantro is great fresh in salads, tomato salsa, and pico de gallo. Cilantro grows well indoors. Cilantro does not winter over and is best used fresh.

Dill is used in pickles, sour cream salad dressing, and in vegetable dip. Not very practical to grow inside and does not winter. Mostly use dill fresh but the leaves can be dried for storage.

Bay leaves are good in Italian cooking. Great for keeping pests out of your wheat berries for storage. Bay leaves grow on a tree that must be kept indoors as it does not handle winter weather at all. Dry the leaves for storage. Note: remove the bay leaves before serving the food. Bay leaves are not for eating.

Chapter 17

Saving Seeds

There are many companies out there now offering to sell you garden seeds. About 99 out of 100 people in America buy their seeds. There is a wide variety to choose from. And that is fine but what happens if they aren't there in the future? Saving seeds has a lot of advantages and is not too difficult once you learn the ins and outs. I am just going to give you the highlights which I feel will be enough to set you on the right path.

Even if you feel confident you can always buy seeds, the number one reason you may want to save seeds is that once you apply the information in this book you will see phenomenal acceleration in the genetics of your crop. Saving the seeds of these "evolved" plants will give you superior seeds to anything you can buy. Also keep in mind that each generation can be even more genetically accelerated creating a revolution in evolution. Imagine 2000lb pumpkins, 100lb cabbages, 20lb squash, 2lb cucumbers, 3lb tomatoes. What you get out of your efforts can exceed anything you can imagine.

First thing to keep in mind is something that was already touched upon. Hybrid seeds don't do well in the second generation and in most cases the seeds are not worth saving. If you get in an emergency situation with no other seeds to save or buy, then over time you can selectively breed up hybrid seeds. In most situations though don't waste your time unless you just want to experiment.

Second thing to beware of is that some seeds have been genetically modified and the modifications have been patented. The evil agri-conglomerates love destroying small farmers by stealing their fields after they had the misfortune of some of these genetics having bled into their crops through cross-pollinization from neighboring fields. Just do your best to keep your seeds pure because most of us don't want to eat their frankencrops anyway.

This leaves saving seeds from non-hybrid open pollinated seeds which is the only type of seeds we recommend growing. When saving seeds you will want to choose the attributes that best suit you. If you plant 1000 tomato plants you may find that 3 of them produce tomatoes ahead of the others. If you live in a short season area where this is beneficial grab those early tomatoes for seeds and plant them the following year. If you are looking for high production save seeds from the tomatoes that produce best. If you are looking for larger tomatoes save the seeds from your biggest tomatoes.

One interesting aspect I have noticed is that if you are doing things right the plant becomes more genetically accelerated

Survival Garden Secrets

towards the end of the season. we started with 2.5 pound straight neck squash which then became 3 pound then 4 and finally at the end of the season 5 pound. Saving seeds from the late crop will give better seeds for the following year.

Most beans, peas, tomatoes, and lettuce are self pollinated and if you start with good seed you should have little problem keeping them pure. You can even plant other types of tomatoes or beans... keep at least 100 feet between the two types and things should be fine. Corn, beets, and spinach are pollinated by the wind and for that reason you want to plant it a good mile from any other varieties in case you are saving the seed. For most other garden plants try to have at least 600 feet or more between different types of the same crop. This would include cucumbers, broccoli, melons, squash, peppers and pumpkins.

Some plants are biennials which means they only set seeds their second season which makes them hard to save seeds for. These would include beets, cabbage, celery, carrots and onions. Leave these in the ground and cross your fingers. The second year they set seeds if all goes well.

It is best to leave seeds that are exposed or in pods to dry outside if possible. This goes for corn also. Once brought inside put in a dry warm (not hot) place until dry and then harvest. Some plants drop their seeds as they dry and those can be bundled and hung upside down over something that can catch the seeds.

For plants like tomatoes, peppers, cucumbers, squash that have their seeds inside of a fleshy fruit one has to harvest the seeds from the pulp by putting the pulp and seeds into warm water and then using the water to separate the seeds after a day. One can on some seeds tell good from bad like eggs. Better seeds sink while not as viable seeds float. Spread the viable seeds on paper towels to dry and once dry place in a paper envelope.

Note: Be sure to save seeds from enough different plants so you can have a good mix and don't inbreed your plants too much. Generally for corn save from 100 plants for a good mix. Self pollinating plants like tomatoes don't need as large a variety of course. Most other plants fall in between in the 10-50 plant range.

One mistake I have made in the past is putting seeds in a freezer and I have seen a lot recommend this. It has not worked well for me. Seeds store best when dried well (but not overtly) and stored in a refrigerator. You want the seeds stored cold but not frozen as freezing can damage some seeds.

Envelopes and paper bags work well for storing seeds through winter. Keeping seeds in a refrigerator can add many years to the normal storage life. Mark the bags and envelopes clearly on the variety and date of harvest. You can put the envelopes and bags in a large (I prefer gallon) glass jar and lid.

Survival Garden Secrets

To test seeds in the early spring take 25 or 100 seeds and place between moistened paper towels in a warm preferably slightly sunny spot. After a week count the number of seeds that germinated and calculate your average. If you have a lot of seed but poor germination do not fret as you can just double or triple up the number of seeds planted to get the number of plants you desire. A trick my wife has done is to soak the seeds in the spray and watch which ones start to sprout and then plant those.

Chapter 18

Berries and Grapes

My children are great berry pickers and spend some of the early summer picking strawberries from our patch and a good part of the late summer harvesting wild blueberries, raspberries, and blackberries. Spraying berry patches, even wild berries helps increase the fruiting and size of fruit.

Foliar spraying the grapes also promotes added growth and increase fruiting. The grapes have also shown higher sugar levels when testing the grape juice. I never drank fresh grape juice until I was in my early 30s and I can tell you it's an incredible treat that make growing grapes worth just about any price.

My children use the wild berries which are frozen through out the winter on their oatmeal and the wild blueberries are used in pancakes which is a favorite of mine. Wild blueberries are smaller than what you find in the store but have much greater flavor.

I have thought of spraying our maple trees with the foliar spray to increase the maple sap sugar levels but have yet to do so. Nothing like fresh berries and maple syrup in one's slop and gruel in a survival situation.

Survival Garden Secrets



Foliar spraying grapes can increase fruiting and sugar levels of the grapes

Chapter 19

Fruit and Nut Trees

As far as survival goes there is just about nothing that can compete with a well producing nut tree. Nuts are high in essential fatty acids and proteins and can produce prodigious amounts of food. Using our foliar spray creates accelerated growth in trees and increases fruit production.

The type of nut trees you choose to grow will depend on the growing region in which you live. But I highly recommend planting nut trees of some sort.

One can purchase nut trees for about \$10-\$15 each for good nursery stock. I have also purchased year old trees in bulk from nurseries with great price breaks at 500 trees. These have cost me in the area of a dollar each. In Wisconsin the DNR also used to sell trees in bulk for about the same but it's been a number of years since I priced them. My favorite is still to start them myself. I have contacted people that had nice nut trees on their farms and paid them to pick me a bushel of nuts. This has cost me in the area of \$30 for a bushel (even if you pay \$50 - \$100 its a steal). We plant the bushel of nuts about an inch or two deep in a well prepared bed in the fall. The next year we finish the year with nice two foot tall whips that we transplant the following spring before

the leaves bud out.

The key to growing trees has been to spend more on the holes we put them in than the trees themselves. You want a great deal of compost for mixing with the soil from the hole you dig for the tree. Keep the soil moist right after transplanting and weed the area well for the first couple years until the tree is well established. You may need to put a tree guard on the trunk to protect the young trees from mice and other vermin that seem to like to chew on the young trees.

For fertilizing we use a ring of composted manure making a circle at the outer branches end. We use foliar spray starting just as the leaves are starting to bud and then about every 3-4 weeks during the growing season.

These suggestions also hold true for young fruit trees. For apple trees we paint the trunks with white exterior paint to reflect the winter sun. It helps keep the trunks from cracking from the odd pressures that can occur when a bright sun is reflecting off snow and being absorbed by the trees trunk.

We have about 60 producing apple trees and we have yet to out produce what the children will eat so my recommendation is to plant as many fruit and nut trees as you possibly can.

Something to keep in mind is that once the tree is planted, growing and producing there is very little upkeep needed



Apple trees are great for producing survival food

unlike a garden which seems to always be in need of attention. Apart from some pruning and occasional spraying fruit and nut trees will produce abundant food year after year.

One problem I have had with my nut trees is squirrels. We have yet to beat them to the hazelnuts that we grow. I swear they must go and visit all the trees and watch over their crops better than any farmer and as soon as the nuts are ready for harvest they are gone. If you do hunt squirrels there are companies like Mepps that buy their tails for fishing lures. Not sure Mepps still buys squirrel tails but I was told they did a few years back. If you don't hate squirrels and chipmunks now just get some nut trees and you will.

Chapter 20

Recipes for canning and freezing

Piccalilli

Chop and mix with 1/4 cup salt. Let sit overnight:

1 qt. chopped cabbage

1 qt. chopped green tomatoes

2 sweet red peppers

2 green peppers

2 large onions

The next morning drain and press to remove as much liquid as possible.

In large stainless steel pot bring the following to a boil:

1-1/2 cups vinegar

2 cups firmly packed brown sugar

1-1/2 cups water

1 tsp. dry mustard

1 tsp. turmeric

1 tsp. celery seed

Boil 5 minutes. Pour into hot, sterilized jars. Process 10 minutes in a boiling water bath.

Dilly Beans

(By the pint jar)

2 cups green beans

1 cup white vinegar

1/2 cup vinegar

1 clove garlic

1 small boiling onion

1 dill head, or 1 spring of dill, or 1/2 tsp dried dill

1 bay leaf

1 tsp pickling salt

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Trim beans to fit into a pint jar, about 4 inches long.

In a stainless steel saucepan, combine the vinegar and water. Heat to a boil. While the brine heats, pack each clean, hot, sterilized pint jar with 1 clove garlic, 1 small onion, dill, 1 bay leaf, and 1 tsp pickling salt. Pack jar with beans leaving a 1/2 inch head space. Remove air bubbles. Seal. Process 10 minutes in a boiling water bath. Cool undisturbed in a draft free area for 12 hours. Store in a cool, dry place. Do not open jars for 6 weeks to allow the flavors to develop.

Dill Pickles

(By the quart jar)

1 qt. small pickling cucumbers
2 dill heads or sprigs of fresh dill or 2 Tbsp dill seed
1 hot pepper (optional)
1 clove of garlic
1 bay leaf

2 tsp. pickling salt

1 cup hot, white vinegar

Boiling water

Pack each clean, hot, sterilized quart canning jar with cucumbers. Add dill, hot pepper, garlic, bay leaf, and pickling salt to each jar. Pour 1 cup hot vinegar in each jar of cucumbers. Fill each jar to within 1/2 in of top with boiling water. Seal. Process 5 minutes in a boiling water bath.

Cool undisturbed in a draft free area for 12 hours. Store in a cool, dry place. Do not open jars for 6 weeks to allow the flavors to develop.

Dill Pickle Spears

(By the quart jar)

5-6 large pickling cucumbers

2 dill heads or sprigs of fresh dill or 2 Tbsp dill seed

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2 tsp. pickling salt

1 tsp pickling spice

8 peppercorns

1/2 hot chinese pepper

1 garlic clove

Cut each cucumber into spears. About 6 per cucumber. Pack each clean, hot, sterilized quart canning jar with cucumber spears.

Add dill, hot pepper, garlic, bay leaf, and pickling salt to each jar. Pour 1 cup hot vinegar in each jar of cucumbers. Fill each jar to within 1/2 in of top with boiling water. Seal. Process 5 minutes in a boiling water bath. Cool undisturbed in a draft free area for 12 hours. Store in a cool, dry place. Do not open jars for 6 weeks to allow the flavors to develop.

Tomato Salsa

Makes 4 pints

24 cups quartered ripe tomatoes

2 cups white vinegar

2 onions, finely chopped

4 garlic cloves

1-1/4 cups finely chopped hot peppers

(You can substitute green pepper for a milder salsa)

In a large stainless steel pot combine the tomatoes and vinegar. Bring to a boil and simmer until the tomatoes are very soft, about 45 minutes.

While the tomatoes cook, prepare the onions, peppers and garlic. A food processor can be used to finely chop each vegetable separately.

When the tomatoes are very soft, using a strainer and pestle set or a food mill, press the tomatoes to remove seeds and skins. Return to pot and add chopped vegetables. Simmer until the salsa has reduced to a thick sauce, about 1 hour.

Ladle the hot salsa into clean, hot, sterilized 1/2 pint or pint jars leaving 1/2 inch head space. Seal. Process 15 minutes in a boiling water bath. Adjust seals if necessary. Cool undisturbed in a draft free area for 12 hours. Store in a cool, dry place. Do not open jars for 6 weeks to allow the flavors to develop.

Freezer Pickles

4 cups thinly sliced cucumbers

2 cups sliced onions

4 tsp salt

2 Tbsp water (or a little more if needed)

3/4 cup sugar

1/2 cup cider vinegar

1 t. dill weed

Layer cucumbers and onions with salt. Let stand 2 hours. Drain. DO NOT RINSE!

Mix together sugar, vinegar and dill weed. Let sit while cucumbers marinate.

Pour liquid over cucumbers. Let stand 12 hours. Freeze in freezer containers or freezer bags. These pickles can also be left in the refrigerator in a 1 gallon jar. Let sit for a few days for flavors to develop.

How to Freeze Green Beans

- 1) Choose fresh green beans with no spots or blemishes.
- 2) Rinse the green beans in cool water. Drain.
- 3) Cut or snap the ends of the beans off. Cut or snap the beans to whatever length you prefer.
- 4) Put the green beans into rapidly boiling water, cover the pot and boil them for 3 minutes. You can re-use this water three to five times - but make sure it's brought back to a full rolling boil.
- 5) Use a large slotted spoon or mesh strainer to remove the green beans from the boiling water and immediately plunge them into a bowl or sink of ice water to stop the cooking. Keep them in the ice water for 3 minutes. Drain well.
- 6) Pack the green beans into freezer bags. Remove as much air from freezer bags as possible to help prevent freezer burn.

How to Freeze Corn

- 1) Husk corn removing as much silk as possible.
- 2) Put the corn on the cob into rapidly boiling water, cover the pot and boil them for 4 minutes. You can re-use this water three to five times - but make sure it's brought back to a full rolling boil.
- 3) Use salad tongs to remove corn from boiling water.
- 4) Immediately place corn into a sink of ice cold water. Let sit in cold water for 4 -5 minutes or till corn is cool to touch.
- 5) Using a sharp knife, cut corn from cob into a large bowl making sure to not cut into the cob itself.
- 6) Pack the corn into freezer bags. Remove as much air from freezer bags as possible to help prevent freezer burn.

Vegetable Juice

22 pounds tomatoes

3/4 cup diced carrots

3/4 cup chopped celery

3/4 cup chopped green pepper

1/2 cup chopped onion

1/4 cup chopped parsley

1 Tbsp salt

Bottled lemon juice

Wash and drain firm, ripe tomatoes. Remove core and blossom ends.

Cut into quarters. Add the rest of the vegetables and simmer 20 minutes.

Press through a fine sieve or food mill. Season with salt. Add 2 tablespoons of lemon juice to each clean, sterilized quart jar. Add 1 tablespoon lemon juice to each clean, sterilized pint jar. Bring juice mixture to a boil. Pour hot juice into jars, leaving 1/4 inch head space.

Adjust caps. Process pints 40 minutes and quarts 45 minutes in a boiling water bath. Makes about 7 quarts.

Pico De Gallo

(Fresh tomato salsa)

2 large tomatoes, chopped

6-8 green onions, thinly sliced

1/4 green pepper, minced

1/2 - whole Jalapeno, Serrano, or Poblano pepper or more to taste

1/2 c chopped Fresh Cilantro

1 - 2 tsp olive Oil

2 Tbsp tomato sauce

1 clove garlic, minced

salt to taste

pepper to taste

dash or 2 tobasco sauce

Dash of oregano

Mix ingredients together. Refrigerate until ready to use.

Tomato Salad

3 - 4 tomatoes

1 green pepper

1 small red onion

1 head broccoli

1 cucumber

Cut vegetables to desired size. Place in large bowl. Add salad dressing.

Recipe follows.

Spicy Italian Dressing

1/2 c oil

1/3 c vinegar

2 tbsp sugar

1/2 tsp salt

1/2 tsp ground celery

1/2 tsp black pepper

1/2 tsp Worcestershire sauce

1/4 c Buffalo wing sauce

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1 clove minced garlic

Mix all ingredients together in a quart mason jar. Mix well.

Keep refrigerated.

Cucumber Salad

2 medium cucumbers, thinly sliced

1 medium onion, thinly sliced

1/2 cup sour cream

1/2 tsp salt

1 Tbsp sugar

1 tbsp vinegar

Combine cucumbers and onion. Stir sour cream, sugar, vinegar, and salt together. Toss dressing with vegetables. Cover and chill, stirring occasionally.

Pumpkin Nut Bread

2 cups all purpose flour

2 tsp baking powder

1/2 tsp salt

1 tsp pumpkin pie spice

1/4 tsp baking soda

1 cup brown sugar

1/3 cup shortening

2 eggs

1 cup pumpkin

1/4 cup milk

1/2 cup coarsely chopped walnuts

1/2 cup raisins (optional)

Combine flour, baking powder, salt, pumpkin pie spice, baking soda, in a mixing bowl, set aside.

Cream together brown sugar and shortening till light in another mixing bowl. Beat in eggs. Add pumpkin and milk; mix well.

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Add flour mixture to sugar-pumpkin mixture, mixing well. Stir in chopped nuts and raisins, if desired.

Pour batter into a well greased 9x5x3 inch bread pan. Bake at 350 degrees for 55 - 60 minutes or till toothpick inserted in center comes out clean. Cool slightly in pan. Remove from pan to a wire rack. Cool thoroughly. Wrap and store overnight before slicing.

Fried Rice

3 - 4 green onions, sliced

1 large egg

1/4 cup fresh or frozen peas or peapods

1/2 cup shredded carrot

1 cup shredded cabbage

1/2 cup chopped celery

1 cup cooked beef or chicken breast cut across the grain into strips

1 tsp salt

Pepper to taste

4 - 5 tablespoons oil for stir-frying, or as needed

4 cups cold cooked rice (hints for perfect rice follow)

3 - 4 tbsp light soy sauce, or to taste

Hint: For perfect fried rice rinse raw rice with warm water till water runs clear, then cook according to directions preferably in a rice steamer.

Lightly beat egg with salt and pepper.

Heat wok or frying pan. PAN MUST BE HOT TO PREVENT STICKING. Add 2 tbsp oil. Add egg. Cook stirring until scrambled but not dry.

Remove egg from wok. Add 1 tbsp oil to still hot pan. Add vegetables.

Stir fry quickly about 2 minutes till hot but not soggy. Add to scrambled egg; set aside.

Add 2 tbsp oil to hot wok. Add rice. Stir fry for a few minutes using a wooden spatula to break it apart. Stir in soy sauce as desired.

When heated through add egg and vegetables to the rice. Mix thoroughly. Serve hot.

Turkey Ham and Bean Soup

8 cups water

1 pound Great Northern beans, Navy beans, or Pinto beans

2 cups cubed turkey ham

1/2 cup chopped onion

1/4 teaspoon pepper or to taste

1 carrot, chopped

1 rib celery, chopped or sliced thinly

2 potatoes, peeled and cubed

1/2 teaspoon salt or to taste

Dash of Tabasco sauce

Bring water and beans to a boil; boil 2 minutes. Remove from heat, cover, and let stand 1 hour.

Stir in turkey ham, pepper, carrot, potatoes, onion and celery. Bring to a boil; reduce heat, cover, and simmer until beans are tender (skim foam from top), about 1 1/2 to 2 hours. If soup is too thick, add a little water.

If too thin cook a little longer.

Barbecued lentils

2 cups dry lentils

2 tsp salt

5 cups water, divided

1 lb lean ground beef

2 garlic cloves, minced

1 (1 1/4 ounce) envelope onion soup mix

1 cup ketchup

1 tsp prepared mustard

1 tsp vinegar

1 tsp pepper

Wash and drain the lentils. In a saucepan add lentils, salt and 4 cups water; bring to a boil. Cover and simmer 20 minutes or until the water is absorbed and the lentils are tender. In a skillet, cook beef and garlic until meat is browned; drain. Stir in soup mix, ketchup, mustard, vinegar, pepper and remaining water.

Gently stir in lentils. Pour into a 2-quart casserole dish. Bake, covered at 400 degrees for 30-35 minutes.

Barbecued Baked Beans

8 cups water

1 pound Great Northern beans, Navy beans, or Pinto beans

Bring water and beans to a boil; boil 2 minutes. Remove from heat, cover, and let stand 1 hour. Cook on high in crock pot till done at least 4 hours, or cook in pressure cooker 10 minutes after it gets up to pressure, or cook 1 hour in large pot (preferably cast iron) on stove top.

Sauce:

1 - 32 oz bottle ketchup

2 tbsp dark molasses

1-1/2 tbsp Tabasco sauce

1 cup chopped onions

1 medium bell pepper

1/2 cup lemon juice

1 tsp garlic powder

1 tbsp vinegar

1/3 cup brown sugar

1 tbsp liquid smoke

1/2 cup water

1/4 cup Worcestershire sauce

Cook onion and green pepper in a little oil till cooked through. Add rest of ingredients and cook till bubbly. Add to beans and heat till hot. You can add cut up hotdogs or small beef sausages or turkey kielbasa to make this a meal instead of a side dish.

Chapter 21

Wrap Up

In a nut shell a good schedule would be as follows.

Fall

Till your garden in the fall. Take samples of your soil and send them in for a soil test. Build a compost pile in one of the corners adding leaves, manure and or cut grass and other organic materials keeping the carbon to nitrogen ratio balanced around 30:1. Keep the compost pile moist and turn once per week.

Winter

Add any wood ashes from your wood stove if you heat with wood through the winter spreading them thinly on top of the garden.

Spring

Add High Calcium lime or gypsum as your garden needs to help balance the calcium to magnesium ratio close to 7:1 and give you a PH between 6.0 and 6.5. Do your first tilling adding in the winters compost pile. Add 50lbs of seaweed and 50lbs of fritted trace elements for roughly every couple thousand square feet, do your last tilling and plant after the last frost. Start a new compost pile for the summer.

Summer

Spray the SGS foliar spray once every week or two early in the morning (around 6am) getting the underside of the leaves wet. Every third spray use a calcium spray if you can. In between spraying water the plants using liquid compost. Slowly increase the frequency of sprays and the concentration of the sprays towards the end of the season.

Fall

Harvest your garden and save seeds that have now been accelerated genetically. Start back up top for the next season.

Chapter 21

The Least Thought Survival Resource

Throughout history manure has been a highly prized commodity. The more manure a farmer had the more and better his crops grew. In an agrarian society manure is the foundation of wealth. We could soon be seeing a return to a manure based society when TSHTF (pun intended.) A survival resource many don't give thought to is human waste. In the 1910 book "Farmers of fourty centuries" Franklin King shows how human waste was so prized that a price of \$31,000 gold was paid for the right to collect night soil in Shanghai. This calculates out to about \$50 per ton in modern terms and they still had to go around the city to collect the waste. By recycling human waste China was able to sustain its nation for thousands of years without destroying the fertility of its land.

We as a nation have lived under the illusion that our waste disposal is as easy as pushing on a handle and watching our waste magically go to poo heaven. Sorry but you need to wake up to the fact that it has to go somewhere! For our home that heaven is a septic tank that digests the waste anaerobically and later percolates pathogen filled waste water into our septic field. Every year or so our septic tank is pumped to remove solids which are then spread on some field somewhere along with whatever pathogens in the tank

Pathogens can include typhoid fever, E-Coli, Cholera, and various worms such as round and hook. These pathogens can contaminate aquifers or water systems. Billions of gallons of fresh drinking water per day are also contaminated while flushing the waste away. We leave it to someone else to dispose of our waste be it the guy who pumps the septic or works at the municipal waste treatment plant. Just so long as we can live in a world where our waste is disposed in a magical manner.

In "less developed" areas of the world human waste is eaten by animals, dumped in rivers and even spread directly on fields used for growing food. Some pathogens can be taken up directly by the crops grown.

Some areas use pit outhouses which can be smelly and disgusting while in use. Once filled the waste is then covered and left to biodegrade over time. These can work well as long as it doesn't contaminate local aquifers.

In our "more developed" world, municipal sludge is treated with poisons like chlorine to sanitize the waste before spreading it on some field or burying. This can help eliminate pathogens but at a cost of poisoning the earth in a different manner.

The only safe method of disposing of our waste is composting. Only through composting are all the pathogens destroyed in an eco-friendly manner. Pathogens are destroyed by a combination of time and temperature. Trillions of friendly microbes, bacteria and fungus convert smelly and unsightly waste into rich dark humus that can be "recycled"

back into the earth and can be used for growing food.

Many have a knee jerk reaction to the thought of using even composted human manure on crops grown for human consumption partly in fear of spreading pathogens. But human waste that is properly composted produces pathogen free humus. Possibly that which was food will have the best nutrients for growing food.

With close to seven billion people now living on this planet we are starting to see breakdowns in our planet's ability to properly feed those who live on it. Part of the failure is coming from a disruption of the natural cycle of food. We now use chemicals to grow food. The food is consumed. People create waste. The waste, instead of being put back into the biological cycle is buried somewhere instead of being composted and returned to the land in order to increase it's fertility.

Given a family size of four and modern low volume flush toilets that use 1.5 gallons of water (this used to be closer to 5 gallons) per flush. With a flush rate of 6 flushes per day per person. This works out to about 13,000 gallons of fresh drinking water per year that is being mixed with human waste. That's per family. For the whole United States it's close to a trillion gallons per year. Worldwide.... well you get the idea.

Modern composting toilets have been around since the 1960s and can work well if not overloaded which is easily done with most standard self contained units. Most of these units cost over \$1000. The two main categories of composting toilets are wet and dry. Wet systems used small amounts of water (micro flush) to flush waste. This aids some in keeping

the inside "fresh". The drawback of the wet systems is that it adds additional liquids the system needs to eliminate. This is usually done with fans, electric heaters and venting. Dry systems can also use fans, heaters and venting.

In my opinion the greatest drawbacks to these totally self contained systems is they attempt to do too much by being both the collector and composter in one. Most of them seem to work more as dehydrators than composters and they lack the high temperatures achieved in the thermophilic (hot temperature bacteria) activity (which needs moisture) of normal compost piles and in that regard are not as thorough in reducing waste to humus in my opinion.

A simpler and less costly method is to have a toilet system with an easy to empty containment unit and a separate outdoor compost pile. We built such a toilet based on the "honey pot" used in Alaska. The honey pot as in... "honey please empty the pot" is nothing more than a five gallon bucket with a well made base.

It looked simple enough so I planed up some lumber we had cut a few summers back and screwed it together, stained it, and threw a toilet seat on top. What we produced looked more like a finely made piece of furniture than a toilet and the only thought left was how well it would work. The bottom of our five gallon bucket is covered in a couple inches of sawdust. The first time sitting on it was shockingly pleasant. Thoughts of it feeling unnatural disappeared and instead of flushing, one only had to throw a handful of sawdust on top. This creates a biofilter and eliminates any odors that might want to leave the bucket. The bathroom smells as fresh as any "normal" bathroom.

Survival Garden Secrets

My big mistake when first using our "Alaskan Loo" was thinking I only had to throw sawdust on top when doing number two. The sawdust quickly became saturated to the point of drowning and our new toilet started to stink something awful. Surprisingly enough once the problem was figured out and extra sawdust thrown in the bucket the sawdust acted like a biofilter and the stench disappeared.

Five man/days or the amount of waste an average person makes in five days fills one bucket. The waste from the Alaskan Loo is emptied into a compost pile when one has a bunch of full buckets and then the buckets are washed out for reuse. A new pile is started once every year allowing the old piles to properly age. We use old hay as a base and covering for our compost pile. The covering works like the saw dust to contain odors. Time and heat destroy any pathogens. We let our compost age two years. What the thermophylic (high temperature) bacteria doesn't destroy time does. You will know your compost is ready for use when all that is left is rich dark odorless humus.

For your compost pile start with a good bed of hay or straw and add the contents of your filled Alaskan Loo buckets into the middle. Wash out the buckets. We use water and Shaklee Basic H along with a bottle brush bought from the local farm supply store. The wash water is also thrown onto the pile. Then cover with a good covering of more hay or straw. It is important to cover your pile well. The material will act as a biofilter to keep any smells inside the pile.

You will want to keep your compost pile slightly moist and aerated. Using hay or straw will keep a good supply of oxygen in your compost pile. Do not water log your compost

pile. If needed you can protect your compost pile from the weather. This can be done by hanging a small tarp above your pile. If your compost pile is built right you won't have to turn it over but once a year.

With a good mix of carbon and nitrogen you should have nice looking compost in as little as a month from the time you started. Because we are composting human waste I recommend you let it age for two years so there is no doubt left in anyone's mind that it is nothing but fresh healthy humus. You can side dress your plants and or use some of it in making compost tea.

The Hunza's of Pakistan became legendary for reports of their health and longevity. Many theories have been promoted about what gave them such long life from the yogurt they ate to a more natural diet of grains, fruit and vegetables. What hasn't been reported as much is that while others in the regions ate similar diets they did not share in the robust health the Hunzas exhibited. What the Hunza people did that others didn't was they composted all their waste including personal waste. They returned fertility back to the ground it came from.

Alaskan Loos can be used to add a low cost bathroom for a studio, office, basement, cabin, or just as a back up toilet. Note: You may have to get a permit from your county for a composting toilet. When the end of the world as we know it comes, sewers and septic tanks will eventually fail. The water will stop flowing and there will be no electricity. Alaskan Loos can be excellent low tech, low cost toilets now and will continue to be a great solution for many generations to come.

Survival Garden Secrets

Some may find it less offensive just using the Alaskan Loo for only number one. This makes emptying the buckets into the compost pile quite a bit less offensive. Alaskan Loos can be an excellent "second bathroom" for only peeing. The good news for this is that 70% of the nutrients from our waste are in the urine. So if you want to be "green" but don't want to take the plunge into composting all waste you can still see most of the benefits of composting urine only.

There are many theories on how the end of the world as we know it will come about. My best guess is that EMP will play an important role in bringing about this life changing event.

Imagine yourself sitting on your living room couch. No TV. No radio. No electricity. The store shelves in town are bare. You have little food left in your fridge or on your shelves and some garden seeds left over from last year's garden.

If you have been using an Alaskan Loo you may at that point find yourself with years and years of old composted waste that you never had the heart to use in your garden. Having a large supply of compost may be your best asset in surviving. It takes a lot of effort to prepare soil to produce large amounts of food. Having a huge supply of superior compost will go a long way towards getting soil productive.

A free downloadable booklet which includes detailed plans for building your own Alaskan Loos can be found at www.alaskanloo.com (If the site is not up check back in a couple weeks).

Survival Garden Secrets

